EDG-6528

8-Port Industrial 10/100 Mbps Ethernet Switch

User Manual

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This product has passed the CE test for environmental specifications. Test conditions for passing included the equipment being operated within an industrial enclosure. In order to protect the product from being damaged by ESD (Electrostatic Discharge) and EMI leakage, we strongly recommend the use of CE-compliant industrial enclosure products.

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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Step 1. Visit the Advantech web site at **www.advantech.com/support** where you can find the latest information about the product.

Step 2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
- Product name and serial number
- Description of your peripheral attachments
- Description of your software (operating system, version, application software, etc.)
- A complete description of the problem
- The exact wording of any error messages

Document Feedback

To assist us in making improvements to this manual, we would welcome comments and constructive criticism. Please send all such - in writing to: support@advantech.com

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CHAPTER 1

Introduction

Sections include:

- Features
- Specifications
- Packing List
- Ordering Information
- Safety Precaution

Chapter 1 Introduction

1.1 Features

The EDG-6528 is an industrial-grade Ethernet switch for fast and cost-effective expansion of industrial Ethernet networks. The EDG-6528 has eight 10/100 Mbps Ethernet ports to connect up to eight Ethernet devices. Moreover, EDG-6528 has industrial-grade design that assures high reliability and stability. Therefore, EDG-6528 is an excellent solution for industrial environments with Ethernet networking, such as: semi-conductor factories, inventory control environments, assembly lines and production facilities.

High-Speed Transmission

The EDG-6528 includes a switch controller that can automatically sense transmission speeds. (10/100 Mbps) The RJ-45 interface can also be auto-detected, so MDI or MDI-X is automatically selected and a crossover cable is not required. All Ethernet ports have memory buffers that support the store-and-forward mechanism. This assures that data is properly transmitted.

Dual Power Inputs (does not include EDG-6528L)

To reduce the risk of power failure, the EDG-6528 provides dual power inputs. If there is a power failure, EDG-6528 will automatically switch to the secondary power input.

Flexible Mounting

EDG-6528 is extremely compact and can be mounted on a DIN-rail or a panel, so it is suitable for any space-constrained environment.

Advanced Protection for Power line and Ethernet Port

The power line of EDG-6528 supports up to 3000 VDC surge protection, which secure equipment against unregulated voltage and make systems safer and more reliable. Meanwhile, 4000 V DC ESD protection for Ethernet ports (not including EDG-6528L) make EDG-6528 more suitable for harsh environments.

Wide Operating Temperature Range

The operating temperature of the EDG-6528 is between 0 and 70° C, and the EDG-6528I can operate between -40 and 85° C. With such a wide range you can use the EDG-6528 in some of the harshest industrial environments that exist.

Easy to Trouble-Shoot

LED indicators make troubleshooting quick and easy. Each port has LEDs that display the link status, power failure, and port activity for immediate on-site diagnosis. (See 2.1)

1.2 Feature Summary

- Provides 8 x 10/100 Mbps Ethernet ports with RJ-45 connector
- Supports dual power inputs (not including EDG-6528L)
- Supports full/half duplex flow control
- Supports MDI/MDI-X auto crossover
- Provides broadcast storm protection
- Embedded with a switch controller, supports auto-negotiation
- Embedded with the memory buffer, supports store-and-forward transmission
- Supports +12 ~ 48 VDC voltage
- Provides 3000 VDC surge protection for power line
- Provides 4000VDC ESD protection for Ethernet Ports (not including EDG-6528L)
- Provides flexible mounting: DIN rail and panel mounting
- Supports wide-range operating temperature
- 128 KB of SRAM on chip for frame buffering
- Integrated address Look-Up Engine, supports 1K absolute MAC addresses

1.3 Specifications

Communications

Standard	IEEE 802.3, 802.3u,802.3x
LAN	10/100Base-TX
Transmission Distance	100 m (Ethernet)
Transmission Speed	up to 100 Mbps

Interface

Connectors	8 x RJ-45
LED Indicators	Power, Fault, Link, 10/100 Mbps

Power

Power Connectors	5-pin removable screw terminal
Power Consumption	Max.3.1 W
Power Input	EDG-6528/6528I: 2 x Unregulated 12~48 V_{DC} EDG-6528L: 1 x Unregualted 12~48 V_{DC}
Fault Output	Present

Mechanism

Dimensions (WxHxD)	56x134x114 mm
Enclosure	Metal shell with PC side panel (mounting kits included))
Mounting	DIN 35 rail, wall

Protection

ESD Protection	4,000 V_{DC} (Ethernet) (6528/6528I only)
Surge Protection	3000 V_{DC} (Power)
Power Reversal Prt.	Present

Certifications

Safety	UL 60950-1, CAN/CSA-C22.2 No.60950
EMC	U.S.A.: FCC Part 15 CISPR 22 EU: EN55011 EN55022 Class A, EN61000-3-2/3 EN55024 IEC61000-4-2/3/4/5/6/8/11
Ingress Protection	IP30

Environment

Operating Humidity	20 ~ 95% (non-condensing)
Operating Temperature	EDG-6528/6528L: 0~70° C (32~158° F) EDG-6528I: -40~85° C (-40~185° F)
Storage Humidity	0 ~ 95% (non-condensing)
Storage Temperature	EDG-6528/6528L: -10~80° C (14~176° F) EDG-6528I: -50~95° C (-58~203° F)
MTBF	1,260,000 hrs

1.4 Packing List

- EDG-6528 Ethernet Switch
- INET CD-ROM
- DIN-rail mounting kit
- Panel mounting bracket

1.5 Ordering Information

- **EDG-6528** 8-port Industrial 10/100 Mbps Ethernet Switch
- **EDG-6528L** 8-port Industrial 10/100 Mbps Unmanaged Ethernet Switch
- **EDG-6528I** 8-port Industrial 10/100 Mbps Ethernet Switch with Wide Operating Temperature

1.6 Safety Precaution

Attention! If DC voltage is supplied by an external circuit, please use a protection device on the power supply input.

CHAPTER 2

Installation

In this chapter, you will be given an overview of the EDG-6528 installation procedure.

Sections include:

- LED Definitions
- Dimensions
- Mounting
- Network Connections
- Power Connections

Chapter 2 Installation

2.1 LED Definitions

There are network status LEDs located on the front panel of EDG-6528, each with its own specific meaning..

Table 2.1: EDG-6528 LED Definition

LED	Color	Description	
PWR	Green	On	Power is on
		Off	Power is off
P1 (EDG-6528L does not have this LED)	Green	On	Power input 1 is active
		Off	Power input 1 is inactive
P2 (EDG-6528L does not have this LED)	Green	On	Power input 2 is active
		Off	Power input 2 is inactive
FAULT (EDG-6528L does not have this LED)	Red	On	Power input 1 or 2 has failed
		Off	Power input 1 and 2 are active
Link (Port 1~8)	Orange	On	Connected to network
		Flashing	Networking active
		Off	Not Connected to Network
10/100 (Port 1~ 8)	Green	On	Link to 100M bps network
		Off	Link to 10M bps network

2.2 Dimensions

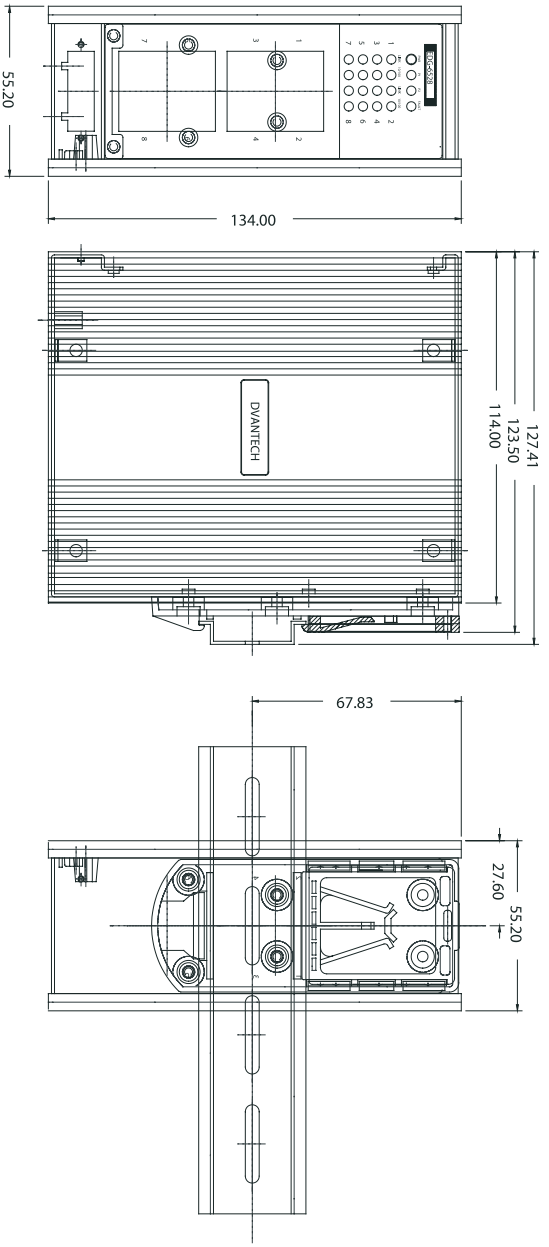

Figure 2.1: EDG-6528 Front Panel and Dimension

2.3 Mounting

2.3.1 Panel Mounting

- Attach the bracket to the EDG-6528 with four screws.
- Place the EDG-6528 against the panel or wall, and fasten it by using two screws in the bracket's holes.

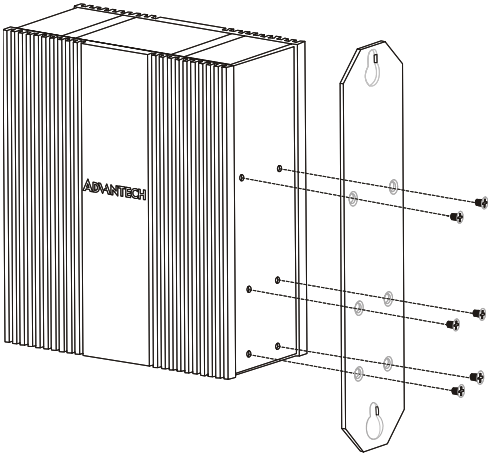

Figure 2.2: Attaching the Bracket

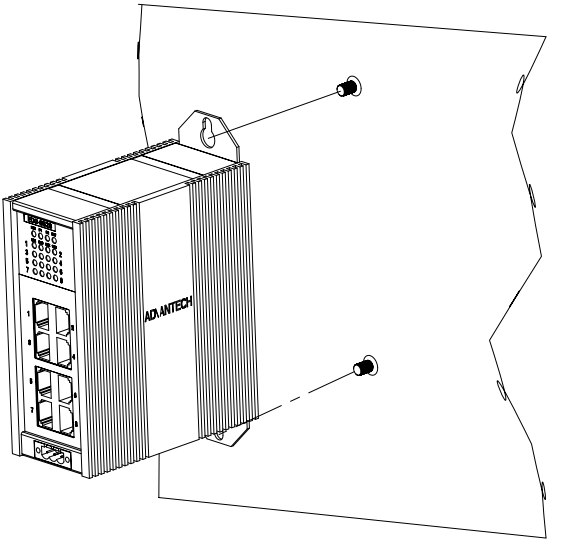

Figure 2.3: Panel Mounting

2.3.2 DIN-rail Mounting

1. Attach the DIN-rail mounting kit to the EDG-6528 with six screws.

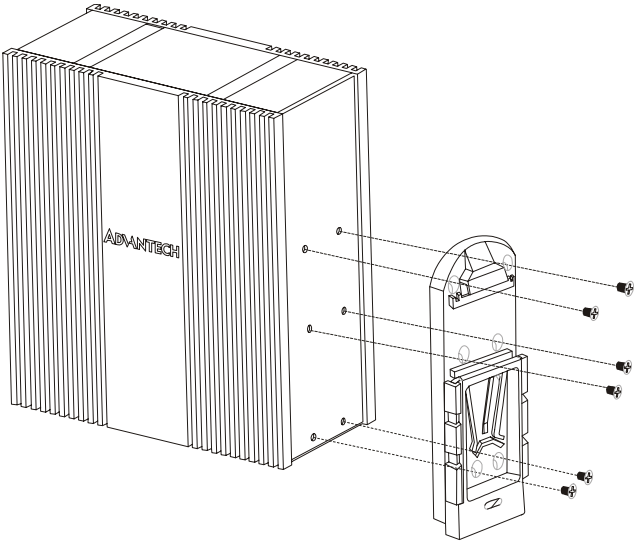

Figure 2.4: Attaching the DIN-rail Mounting Kit

2. Snap the EDG-6528 onto the DIN rail to attach it.

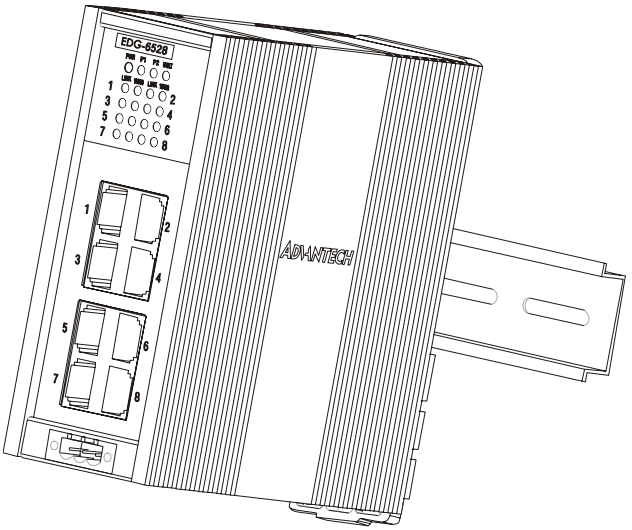

Figure 2.5: DIN-rail Mounting.

2.3.3 DIN-rail Dismounting

Use a flat screwdriver to lift the DIN rail's attachment bracket up. This will release the EDG-6528 from the Din-rail. Then pull the EDG-6528 down to dismount it.

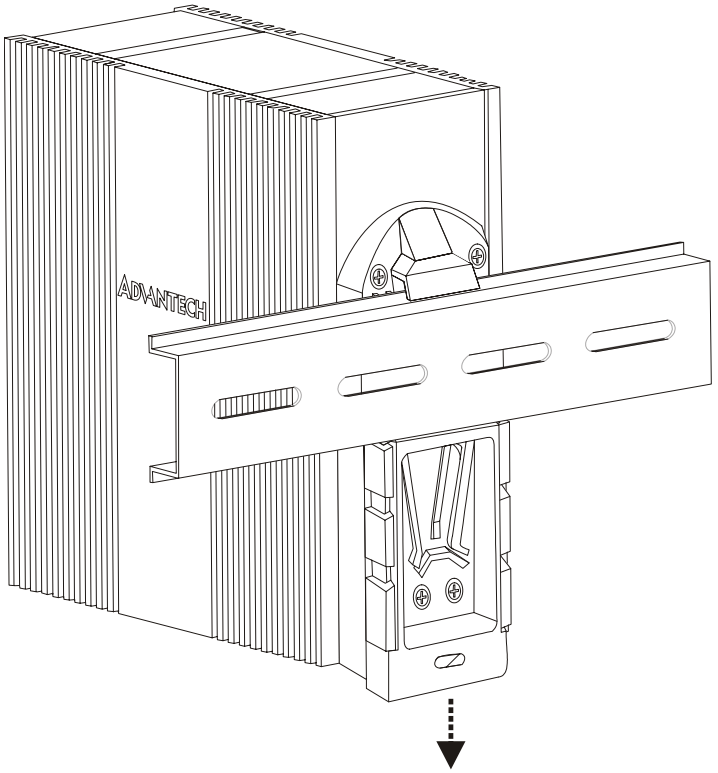

Figure 2.6: DIN-rail Dismounting

2.4 Network Connections

2.4.1 Connection to Devices

Each of the switch's twisted-pair ports can be used to connect a station or another device. Use a straight-through twisted-pair cable with RJ-45 connectors on both ends. A twisted-pair cable extended from a twisted-pair port is called a "twisted-pair segment," and it can be up to 100 meters long.

You can connect any RJ-45(MDI-X) station port on the switch to any device that uses a standard network interface such as a workstation or server.

2.4.2 Connection to Other Hubs or Switches

EDG-6528 has 8 RJ-45 ports that support connection to 10 Mbps Ethernet or 100 Mbps Fast Ethernet, and half or fullduplex operation. EDG-6528 can be connected to other hubs or switches via a two-pair straight through cable or a crossover cable.

The connection can be made from any ports on EDG-6528 (MDIX) to other Hubs or Switches either by MDI-X port or the uplink MDI port.

EDG-6528 supports auto crossover to make it easier to setup your network. You can connect any RJ-45(MDI-X) station port on the switch to any device such as a switch, bridge or router.

2.5 Power Connections

EDG-6528 and EDG-6528I support two individual power inputs (P1/P2); it will switch to another power input if one power input fails.

Pin	Description
+Vs	Power input 1 (Range: +12~48VDC)
+Vs*	Power input 2 (Range: +12~48VDC)
GND	Power ground
	Relay out (EDG-6528L does not have this function) You can connect to an alarm such as an indicator, buzzer or other signaling equipment by EDG-6528's relay output. The relay opens if power input 1 or power input 2 fails.

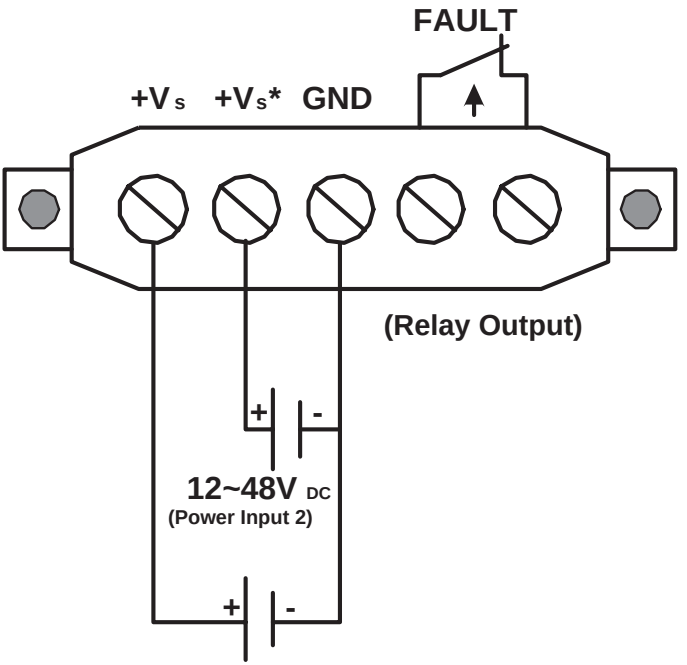

Figure 2.7: Pin Assignment of the Power Connector